

Figure 1 is a schematic block diagram showing major components of a conventional, prior art digital projection apparatus;

Figures 2a and 2b are ray diagrams showing incidence of light upon a dichroic coating at two different $f/\#$ values;

Figures 2c and 2^d are ray diagrams showing non-telecentric and telecentric light incident upon a dichroic coating;

Figure 3a shows the imaging response of an idealized X-cube;

Figure 3b shows the imaging response of an X-cube having slight misalignment errors;

10 Figure 4 is a block diagram showing the light modulation assembly of the present invention;

Figure 5 is a perspective view from the front of a projection apparatus of the present invention, showing light modulation paths in a preferred embodiment;

15 Figure 6 is a schematic block diagram showing major components of a projection apparatus of the present invention;

Figure 7 is a schematic block diagram showing major components of an alternative embodiment of a projection apparatus of the present invention using a Philips prism as dichroic combiner; and

20 Figure 8 is a schematic block diagram showing major components of another alternative embodiment of the present invention using a transmissive LCD as spatial light modulator.

DETAILED DESCRIPTION OF THE INVENTION

25 The present description is directed in particular to elements forming part of, or cooperating more directly with, apparatus in accordance with the invention. It is to be understood that elements not specifically shown or described may take various forms well known to those skilled in the art.

In light of the description given in the background section above with reference to Figures 1 and 2a-2d, a goal of the present invention is to
30 provide light to dichroic combiner 26 in telecentric form at a high $f/\#$, taking advantage of the resulting relaxed requirements on dichroic combiner 26 fabrication while still providing the necessary brightness. The additional

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